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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/663,897	09/16/2003	Gail A. Alverson	324758001US3	4520
25096	7590	04/14/2006	EXAMINER	
PERKINS COIE LLP PATENT-SEA P.O. BOX 1247 SEATTLE, WA 98111-1247			TANG, KENNETH	
			ART UNIT	PAPER NUMBER
			2195	

DATE MAILED: 04/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/663,897

Applicant(s)

ALVERSON ET AL.

Examiner

Kenneth Tang

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7,9-11 and 13-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3-4, 6-7,9-11 and 13-23 is/are rejected.
- 7) ☐ Claim(s) 2 and 5 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. This action is in response to the Amendment on 1/23/06. Applicant's arguments have been fully considered but were not found to be persuasive.
2. Claims 1-7, 9-11, and 13-23 are presented for examination.

Allowable Subject Matter

3. Claims 2 and 5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

4. During patent examination, the pending claims must be "given their broadest reasonable interpretation consistent with the specification." *In re Hyatt*, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000). Applicant always has the opportunity to amend the claims during prosecution, and broad interpretation by the examiner reduces the possibility that the claim, once issued, will be interpreted more broadly than is justified. *In re Prater*, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-51 (CCPA 1969).

5. *Applicant argues that the newly amended claims distinguish the "stream" from the teachings of Hogle.*

In the Interview on 1/10/05, it was agreed to further limit the "stream" to overcome the references. However, the amended claims still read on the broadest reasonable interpretation.

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In Sliberschtaz et al., it defines a thread as consisting of a program counter, a register set, and a stack space (page 103, , lines 1-3). The broadest reasonable interpretation of a stream includes memory or a stack space that is included with a thread. Therefore, if threads and/or tasks are disclosed (as it is in Hogle), it is apparent that a stream is also included.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 3-4, 6-7, 9-11, and 13-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hogle et al. (hereinafter Hogle) (US 6,560,626 B1) in view of Jones et al. (hereinafter Jones) (US 6,584,489 B1).

7. As to claim 1, Hogle teaches a method in a computer system for returning a stream to a task executing an operating system call that is blocked, the computer system having a processor with multiple streams, each stream for executing instructions of a task, the method comprising: under control of a thread of the task executing on a first stream, making an operating system call (*see claim 8, etc.*); and when the operating system call blocks (*col. 5, lines 58-67, etc.*),

under control of the operating system executing on a second stream, invoking a function provided by the task to provide the second stream to the task (*col. 1, lines 21-32*);

under control of the invoked function, executing instructions of the task on the second stream (*col. 1, lines 32-59*); and

under control of the operating system, notifying the task when the operating system call is complete (*col. 5, lines 47-57 and col. 6, lines 15-21*).

8. Hogle teaches that thread functions are not available during its blocked state (*col. 1, lines 46-47*) but fails to explicitly teach returning a stream to a task when an operating system call is blocked. However, Jones teaches task scheduling with returning the requesting thread when it is blocked (*col. 27, lines 10-22*). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the feature of returning a stream to a task when an operating system call is blocked because it is desirable to return (or not keep) the threads that are supposed to be blocked.

9. As to claim 3, Hogle teaches wherein the executing of instructions on that stream includes indicating that a thread that invoked the operating system call is blocked and executing another thread on that stream (*col. 7, lines 61-65*).

10. As to claims 4 and 6, they are rejected for the same reasons as stated in the rejection of claims 1-3.

11. As to claim 7, Hogle teaches a method in a computer system for assigning a processor stream to a thread of a task, the method comprising:

under control of a thread of the task executing on a first processor stream, invoking an operating system call that will block and wait for the occurrence of an event (*col. 1, lines 33-67*); and

under control of the operating system, when the call is blocked, invoking a routine of the task so that the routine can assign a second processor stream to another thread of the task (*col. 7, lines 63-65, col. 5, lines 58-67, etc.*).

Hogle teaches that a processor stream is a component of a processor such as a resource, stack, memory, etc. Hogle fails to explicitly teach wherein a processor stream (resource) supports multiple streams. However, Jones teaches wherein the processor resource is a stream of a processor that supports multiple streams (one or more resources for a processor while the processor manages multiple resources) (*col. 5, lines 15-28, col. 22, lines 6-30*). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the feature of a stream of a processor that supports multiple streams (one or more resources for a processor while the processor manages multiple resources) to the existing resource system of Hogle because more resources will allow for more memory capacity (or more network bandwidth, or more devices, etc) while having a resource manager to manage the multiple resources/streams (*col. 5, lines 15-28*).

12. As to claim 9, Hogle teaches wherein the task registers the routine with the operating system prior to invoking the operating system call (*col. 1, lines 21-22*).

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13. As to claim 10, Hogle teaches notifying the task when a operating system call completes (*col. 5, lines 47-57 and col. 6, lines 15-21*).

14. As to claim 11, it is rejected for the same reasons as stated in the rejection of claim 7. In addition, Jones teaches wherein the processor resource is a stream of a processor that supports multiple streams (one or more resources for a processor) (*col. 5, lines 15-28, col. 22, lines 6-30*).

15. As to claims 13-14, they are rejected for the same reasons as stated in the rejection of claims 9-10.

16. As to claim 15, it is rejected for the same reasons as stated in the rejection of claim 1.

17. As to claim 16, Hogleteaches wherein the operating system invokes the first function using the stream that will block (*col. 2, lines 18-30*).

18. As to claim 17, Jones teaches wherein invoking the first function returns the stream to the user program (*col. 27, lines 10-22*).

19. As to claim 18, Hogle teaches wherein the user program selects a thread that is not blocked for execution on the stream (*col. 7, lines 50-65*).

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20. As to claim 19, Jones teaches wherein the second function schedules for restarting a thread that was blocked on the operating system call that was blocked (*col. 6, lines 51-67*).

21. As to claim 20, Jones teaches wherein the second function returns a stream provided by the operating system (*col. 27, lines 10-22*).

22. As to claim 21, it is rejected for the same reasons as stated in the rejection of claims 1 and 7. In addition, Hogle teaches executing the operating system call in a user stream of the user program (*col. 6, lines 22-34*), when a thread making the operating system call is locked, waiting for the operating system call to become unblocked (*col. 1, lines 33-45*), and under control of a trap handler routine, placing the thread in a blocked pool and selecting another thread to execute on the stream (*col. 2, lines 13-30 and col. 7, lines 63-65*).

23. As to claims 22-23, they are rejected for the same reasons as stated in the rejection of claims 19-20.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after

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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth Tang whose telephone number is (571) 272-3772. The examiner can normally be reached on 8:30AM - 6:00PM, Every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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MENG-AI AN
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